

SDIO In-Hand Scan Card

SDIO Card with Integrated Linear CMOS Bar Code Reader for:

- *Pocket PC 2003 devices with SDIO slot*
- *Palm devices with SDIO slot*

User's Guide



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Other than the above, Socket Communications can assume no responsibility for anything resulting from the application of information contained in this manual.

Socket Communications requests that you refrain from any applications of the Socket SDIO In-Hand Scan Card that are not described in this manual. Please refrain from disassembling the card. Disassembly of this device will void the product warranty.

You can track new product releases, software updates and technical bulletins by visiting Socket's web page at: www.socketcom.com.

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1 | Introduction

Overview

The Socket SDIO In-Hand Scan Card gives you the freedom of scanning bar codes anytime anywhere into your Pocket PC 2003 or Palm device using the smallest and most lightweight form factor available for an expansion card. In a small size totaling less than 23 grams, the card features state-of-the-art linear CMOS imaging technology.

The world's only bar code scanner built into an SDIO card, the SDIO In-Hand Scan Card is a small and sleek unit with no cables or batteries. You can scan with only one hand, letting you collect data with maximum ease and efficiency. The most popular bar codes are automatically detected.



About the Software



SocketScan™ enters scanned data directly into any open Windows or Palm OS program, as if the data were manually typed. You can configure Prefix/Suffixes and assign a .WAV file to signify good data reads. SocketScan for Palm also makes it easy to assign a trigger button.



If you don't want to or can't use a hardware button to trigger the scanner, you can install SocketScan Trigger for Windows CE (also compatible with Windows Mobile 2003). This puts an icon on your screen that you can tap to trigger the scanner. The trigger "floats" on the screen above any active application.

For software updates, please visit:

www.socketcom.com/support/support_bar.asp

System Requirements

Pocket PC 2003 with SDIO slot:

- ARM processor
- Windows Mobile 2003 or Windows Mobile 2003 SE
- SDIO *Now!* software from bSQUARE in System ROM

Palm devices with SDIO slot:

- Palm OS v4.1 or greater

Package Contents

- Socket SDIO In-Hand Scan Card
- Installation CD containing software and user documentation
- Booklets containing warranty and copyright information

Product Registration

Socket highly recommends that all users register their Socket products. Registered users receive priority for technical support. Register your Socket product online at www.socketcom.com/prodreg

Product Registration / Technical Support

I am a new user

Please select your Country or Region.

Country/Region
Select a Country

I am a returning user

Welcome back. Please sign in.

Email Address

Password

[» Forget Password?](#)

Product registration is not required to ensure your warranty rights.

▶ Please contact webmaster@socketcom.com if you need help.

2 | Setup for Pocket PC 2003

This chapter explains how to install and use the Socket SDIO In-Hand Scan Card with a Pocket PC running Windows Mobile 2003 or Windows Mobile 2003 Second Edition. The SocketScan software supports both portrait and landscape mode for Windows Mobile 2003 Second Edition.

Setup Summary

STEP 1: Uninstall other scanning software.

STEP 2: Install the software.

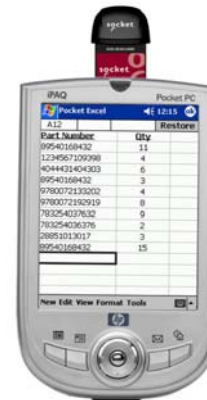
STEP 3: Insert the card.

STEP 4: Assign a trigger button.

STEP 5: Scan data into your application.

OPTIONAL:

- Select symbologies.
- Configure prefix/suffixes.
- Configure sounds.
- Use SocketScan Trigger.



STEP 1: Uninstall Other Scanning Software

Delete any bar code scanning software you may already have installed on your Pocket PC. You can uninstall either directly from your Pocket PC, or indirectly via ActiveSync.

OPTION 1: Uninstall Directly from the Pocket PC

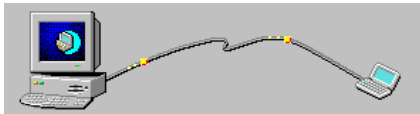
1. Make sure the bar code scanning software is closed, and remove the ISC from your Pocket PC.
2. Tap **Start | Settings**. Tap on the **System** tab or **Control Panel**.
3. Tap on the **Remove Programs** icon.
4. Select the bar code scanning software, then tap **Remove**.
5. Tap **Yes** to confirm removal of the program.

OPTION 2: Uninstall via ActiveSync

1. Make sure the bar code scanning software is closed, and remove the ISC from your Pocket PC.
2. Use ActiveSync and a serial/Ethernet/USB cable or cradle to make an active connection between your Pocket PC and a host PC.
3. On the host PC, open Microsoft ActiveSync.
4. Click **Tools | Add/Remove Programs**.
5. Select the bar code scanning software and click **Remove**.
6. In the confirmation screen, click **OK**.
7. The next dialog will ask if you want to remove the software from your host PC as well.
 - Click **NO** to keep a copy of the software on the host PC that can later be re-installed onto a Pocket PC.
 - Click **YES** to remove the software from the host PC.

STEP 2: Install the Software

1. Make an active connection between your Pocket PC and a host PC.
Use ActiveSync and a serial/USB/Ethernet connection cable or cradle.



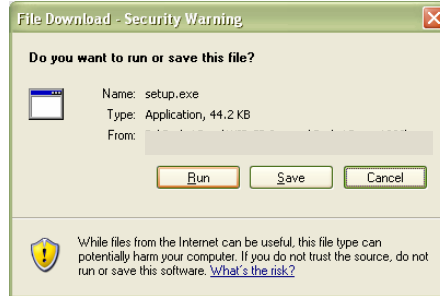
2. Insert the installation CD into your host PC.
3. Use **My Computer** or **Windows Explorer** to access your CD-ROM drive.
In the CD, click on **SETUP.EXE**.



4. Follow the instructions on your screen to install the software.
 - Read the information in the first screen and click **next**.
 - In the Main Page, click **Install Software**.
 - In the Installation screen, click **Windows CE**.



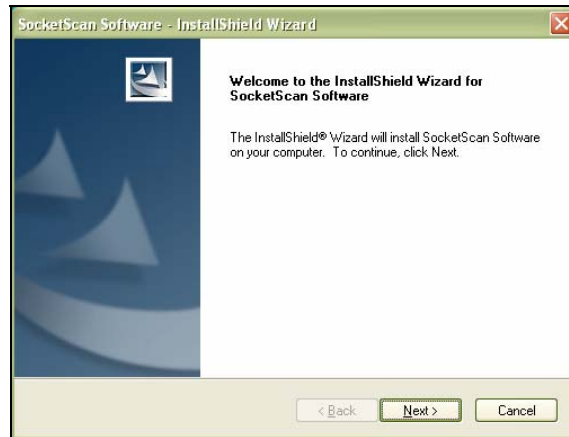
5. In the File Download screen, click **Run**.



6. If the Security Warning screen appears, click **Run**.



7. The InstallShield Wizard for SocketScan Software will begin. Follow the screens that appear to install the software.



8. When software installation is complete, disconnect the Pocket PC from the host PC. Soft reset the Pocket PC by pressing the reset button. Now you are ready to insert the card.

STEP 3: Insert the Card



Make sure you have soft reset your device after software installation before you insert the card.

Insert the card into your Pocket PC's SDIO slot. Make sure the card is positioned correctly. Do not insert the card upside-down or force the card in too hard.



***IMPORTANT!** To remove the SDIO In-Hand Scan Card, push the card completely into the slot. After the card springs back, you can safely remove the card. Do not pull the card out without pushing first, or you can damage the connector the next time you insert a card.*



Do not soft reset the Pocket PC when the Socket card is inserted, or errors may occur in applications using the card. If errors occur, remove the card and soft reset the device. Wait for the device reset to finish before you re-insert the card.



The SDIO slots of some Pocket PCs will continue to draw power from the Pocket PC's main battery whenever an SD/SDIO card is inserted (whether the card is from Socket or another manufacturer), even when the Pocket PC is turned off (suspended). If you have one of these Pocket PCs, Socket recommends that you completely remove the card whenever the card is not in use. For more information, please visit: www.socketcom.com/support/support_bar.asp

STEP 4: Assign a Trigger Button

Refer to your device's user documentation to assign a trigger button.



If you do not want to assign a hardware button to trigger the scanner, you can install Socket's Floating Trigger, available on the installation CD.

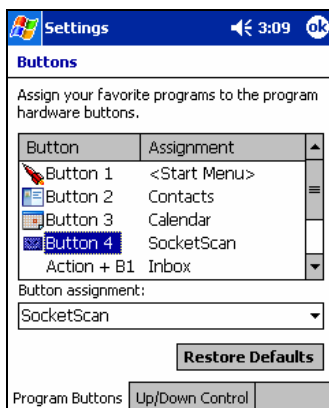


If SocketScan is not running yet, you can press the assigned trigger button to quickly launch SocketScan. Pressing the trigger button will fire the laser only when SocketScan is open.

1. Go to Start | Settings | Buttons.



2. From the Button list, select a button to trigger the SDIO Scan Card. In the Button assignment field, select SocketScan. When done, tap ok.



Note: For maximum ergonomic placement, choose a button located directly beneath your thumb or forefinger when you hold the Pocket PC. The Voice Record button is a good choice for most Pocket PCs.

STEP 5: Scan Data into Your Application

1. Start SocketScan. Go to Start | Programs | SocketScan.

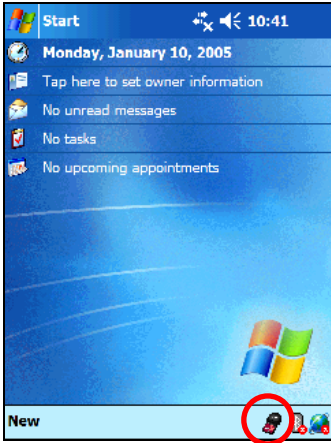




SocketScan



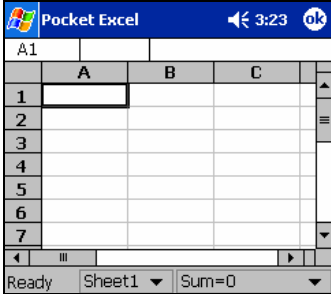
Alternatively, you can press the trigger button to start the program.

2. Make sure the “Scan Card detected” icon appears in the task tray, visible from the Today screen.



Icon	Meaning.
SDIO Scan Card detected 	SocketScan detects the scanner and is ready to scan.
No scanner detected 	No scanner detected. The scanner is either missing or improperly inserted.

3. Start the Windows application that you want to receive the data (e.g., Excel, Notepad, etc.). Make sure a document or spreadsheet is open.



4. Press the assigned trigger button and scan the code.

For example, try this Code 39 bar code:

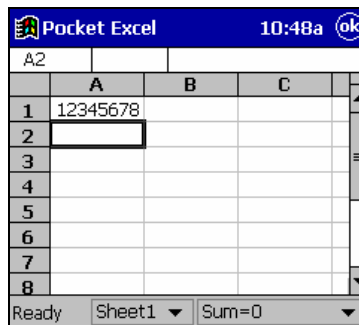


When data is read, a beep should sound, and the imager should turn off. If the SDIO Scan Card fails to read data within a few seconds, the imager will turn off, and you must try again.



If your device enters sleep mode when Socket press the ON button to initialize the scanner a operation.

5. After a successful scan, data should appear in your document. For example, after you scan the code above into a Pocket Excel spreadsheet, data should appear in the first cell.



Pocket Excel				10:48a		ok	
A2							
	A	B	C				
1	12345678						
2							
3							
4							
5							
6							
7							
B							
Ready	Sheet1		Sum=0				




For tips on scanning technique, please refer to Appendix E.

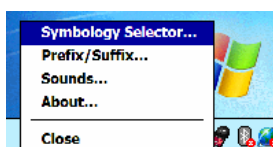


For information about bar code scanning applications, please email info@socketcom.com

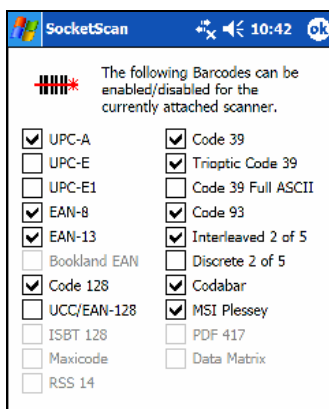
OPTIONAL: Select Symbolologies

The applet makes it quick and convenient to modify which symbolologies you want the scanner to recognize. By default, the scanner is set to recognize nine of the most common symbolologies.

1. Tap on the SDIO scanner icon in the menu bar  to launch the applet (visible in the *Today* screen for Pocket PCs).
2. In the pop-up menu, select **Symbology Selector...**



3. In the screen that appears, check the symbolologies you wish to enable. Uncheck those you wish to disable. Tap **ok**.



Symbolologies not supported by the SDIO card will be grayed out.




Trioptic Code 39 must be enabled for Code 128 to work correctly.

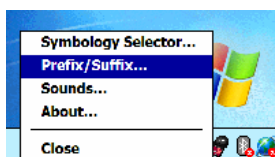


Enabling all possible symbolologies will make the decode process slightly longer.

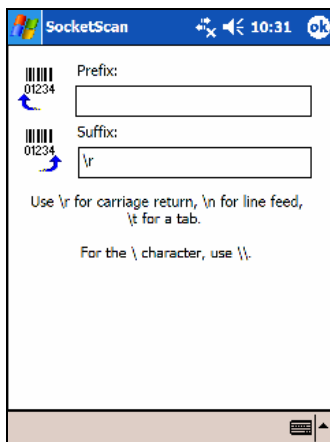
OPTIONAL: Configure Prefix/Suffixes

The SocketScan applet lets you specify prefix and/or suffix characters to be added automatically to the data you scan. This helps to further eliminate manual data entry.

1. Tap on the SDIO scanner icon in the menu bar  to launch the applet (visible in the *Today* screen for Pocket PCs). You can configure prefix/suffixes even if the “no scanning card detected” icon appears.
2. In the pop-up menu, select Prefix/Suffix...




3. In the screen that appears, enter the characters you want to be appended to each scan (128 character maximum). Tap ok.

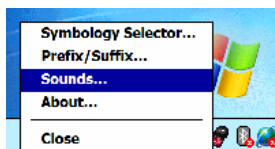


The default suffix is a carriage return. Only printable ASCII characters can be used as prefixes or suffixes.

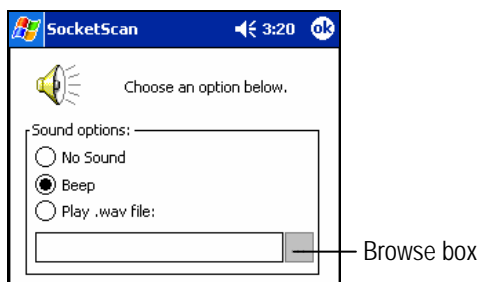
OPTIONAL: Configure Sounds

The SocketScan applet lets you choose any WAV sound file to be played to indicate a successful scan.

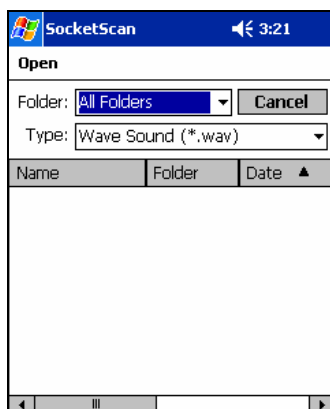
1. Tap on the SDIO scanner icon in the menu bar  to launch the applet (visible in the *Today* screen for Pocket PCs).
2. In the pop-up menu, select **Sounds...**



3. In the screen that appears, select a sound for indicating successful scans. Tap **ok**.



To you want to play a .WAV file, after selecting **Play .wav file**, you can search through files by tapping the browse box. In the **Open** screen, tap on the file you want:

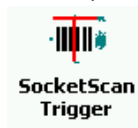


Note: You can only select a WAV file from the My Documents folder. If needed, copy the file you need to this folder.

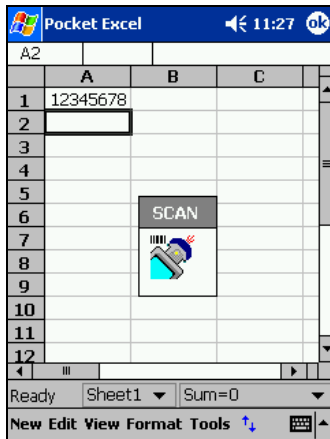
OPTIONAL: Use SocketScan Trigger

If you find it inconvenient or impossible to assign or use a hardware button to trigger the scanner, you can install this virtual trigger button that “floats” on top of the active application.

1. Make sure to do all of the following before using SocketScan Trigger:
 - Install SocketScan Trigger from the installation CD. The software must be installed separately from SocketScan.
 - Start SocketScan. Tap Start | Programs | SocketScan.
 - Insert the SDIO In-Hand Scan Card into your Pocket PC.
 - Open the application that you want to scan data into.
2. Start SocketScan Trigger. Tap Start | Programs | SocketScan Trigger.



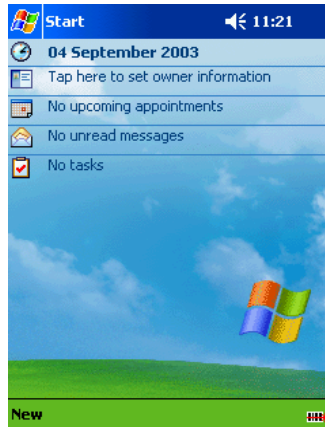
3. The floating trigger button will appear on your screen on top of the active application.



Drag from the title bar to move the trigger button to a convenient place on the screen.

Tap the trigger button to activate the scanner.

4. A SocketScan Trigger icon will also appear in the menu bar of the Today screen. Tap this icon to open a pop-up menu with the following options:



- Tap **Scan Now** to activate the scanner as if you had tapped the trigger button.
- Tap **Remove Floating Trigger** to remove the trigger button from the screen but keep the icon handy on the task bar. To restore the trigger button, tap on the menu bar icon. In the pop-up menu, tap **Launch Floating Trigger**.
- Tap **About** to view SocketScan Trigger version information.
- Tap **Close SocketScan Trigger** to close the application completely. From this state, the SocketScan trigger can only be launched from the Programs page.

3 | Setup for Palm

Setup Summary

- STEP 1: Uninstall other scanning software.
- STEP 2: Install the software.
- STEP 3: Insert the card.
- STEP 4: Configure SocketScan.
- STEP 5: Scan data into your application.


OPTIONAL:

- Select symbolologies.
- Perform a scan test.
- View Help files.
- View version information.



The instructions in this chapter were based on a Tungsten T running Palm OS 5.0. The instructions for your device may differ a little.



For help using SocketScan, tap on the  button on the top of any screen.

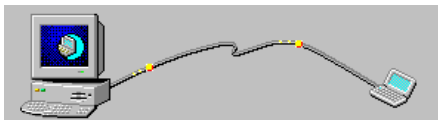
STEP 1: Uninstall Other Scanning Software

Delete any previously installed versions of SocketScan for Palm or any other bar code scanning software you may already have installed on your device.

1. Tap **Home**, then tap **Menu**
2. In the App menu, tap **Delete**.
3. In the Delete screen, scroll to select your bar code scanning application. Tap **Delete**. In the confirmation screen, tap **Yes**.

STEP 2: Install the Software

1. Use HotSync and a serial/Ethernet/USB cable or cradle to connect your device to a host PC.



2. Insert the Socket installation CD into your host PC.



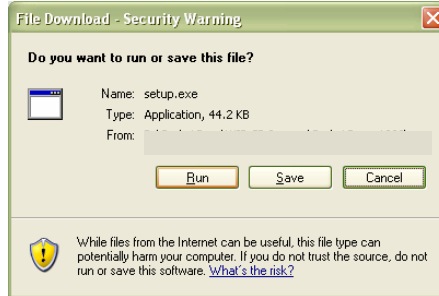
3. Use My Computer or Windows Explorer to access your CD-ROM drive. In the CD, click on SETUP.EXE.



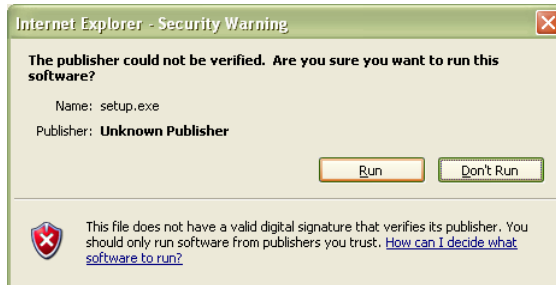
4. Follow the instructions in the SDIO In-Hand Scan Card Setup Center to install the SocketScan for Palm software on your Palm Desktop.
 - Read the instructions in the Welcome screen, then click Next.
 - In the Main Page, click Install Software.
 - In the Installation screen, click Palm OS.



5. In the File Download screen click Run.



6. If a Security Warning screen appears, click Run.



7. The SocketScan Installation program will begin. Follow the instructions on your screen to install the software.



8. When software installation is complete, disconnect the device from the host PC. Soft reset the device by pressing the reset button.

9. A Socket icon should appear on the screen of your device. Tap this icon to install the correct version of SocketScan on your Palm device.

10. Soft reset the Palm device again by pressing the reset button.

STEP 3: Insert the Card

Insert the card into your Palm device's SDIO slot. Make sure the card is positioned correctly. Do not force or shove the card in too hard.



Older Palm m100 & m500 series devices: The SDIO slot is reversed, so the scanner must be inserted backwards.



To remove the SDIO In-Hand Scan Card, push the card completely into the slot. After the card springs back, you can safely remove the card. Do not pull the card out without pushing first, or you may damage the connector the next time you insert a card



Make sure you have soft reset your device after software installation before you insert the card. Press the reset button.

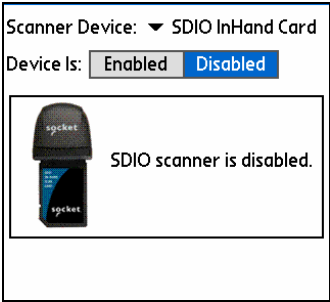
STEP 4: Configure SocketScan



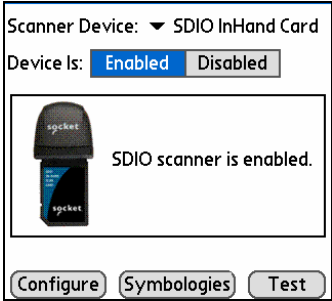
- 1. Start SocketScan. Tap on the Home icon.
- 2. In the menu in the upper right corner, select All.
- 3. Scroll to the SocketScan icon. Tap on the icon.



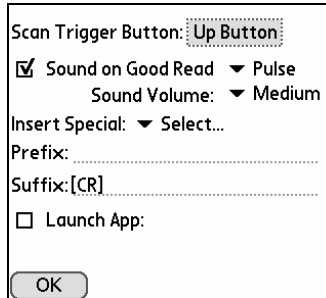
- 4. The main screen of SocketScan will appear. In the Scanner Device field, make sure SDIO InHand Card is selected. A picture of the SDIO In-Hand Scan Card should appear.




- 5. In the Device Is field, tap Enabled. Buttons will appear at the bottom of the screen. Tap Configure.

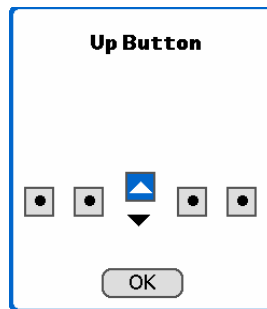


6. Use the Configure screen to configure basic SocketScan options:



For help on SocketScan, tap on the  symbol in the upper right corner.

- **Scan Trigger Button:** Tap to select the hardware button you would like to use to trigger the scanner. In the screen that appears, select the hardware button and tap OK.



At this time, Palm utilities do not allow assignment of the Record or Voice button as a trigger.

- **Sound on Good Read:** Check if you would like the device to make a sound whenever the scanner successfully reads a bar code. In the drop-down menu, select the sound you want.
- **Sound Volume:** Select the sound volume used to indicate good reads.
- **Insert Special:** Make sure the cursor is in either the Prefix or Suffix field. Use the Insert Special drop-down menu to select a special function or data (e.g., time stamp) to insert before or after each scan.

- **Prefix/Suffix:** Enter any characters or functions you would like to append to each scan. Besides special functions listed in the **Insert Special** menu, only printable ASCII characters can be used as prefixes or suffixes.

Scan Trigger Button: Up Button

Sound on Good Read ▼ Pulse
Sound Volume: ▼ Medium

Insert Special: ▼ Select...

Prefix: [DS][TAB][TS]

Suffix: [CR]

Launch App: ▼ Memos-PMem

OK



TIP

A carriage return [CR] is the default Suffix. This suffix advances the cursor to the next data field in your application.

- **Launch App:** Check if you want SocketScan to launch an application when you start to scan. In the drop-down menu, select the application.

7. Tap OK to make the settings take effect.

STEP 5: Scan Data into Your Application

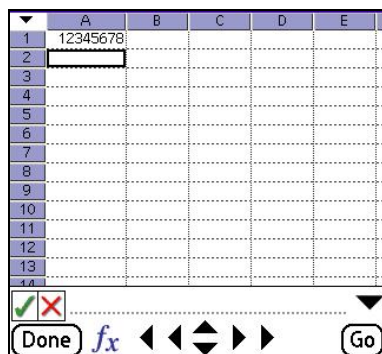
1. Make sure the Scanner is enabled in SocketScan. To check if the scanner is enabled, tap the **Home** icon. In the drop-down menu in the upper right corner, select **All**. Tap on the **SocketScan** icon.
2. If you did not assign SocketScan to launch an application, then you need to manually start the application that you want to receive data (e.g., SheetToGo). Make sure a new document or spreadsheet is open.
3. Press the assigned trigger button and scan the code.

For example, try this Code 39 bar code:



4. When data is read, your device will make a sound if you configured SocketScan to do so, the scanner will turn off, and data will appear in your application.

For example, after you scan the bar code above into a new spreadsheet, data should appear on the first line.



	A	B	C	D	E
1	12345678				
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					

If no data is read within a few seconds, the scanner will turn off, and you must try again.



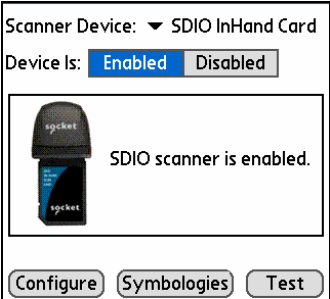
For tips on scanning technique, please refer to Appendix E.



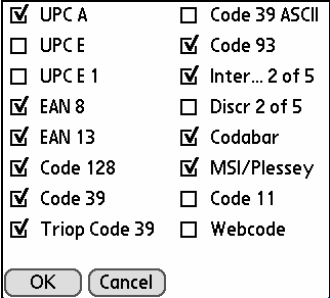
For information about bar code scanning applications, please email info@socketcom.com

OPTIONAL: Select Symbologies

1. In the main screen of SocketScan, make sure the SDIO scanner is enabled and tap Symbologies.



2. Use the checkboxes to select which symbologies you would like the scanner to decode. Tap OK.



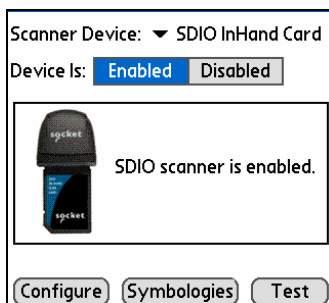
Enabling all possible symbologies will make the decode process slightly longer.



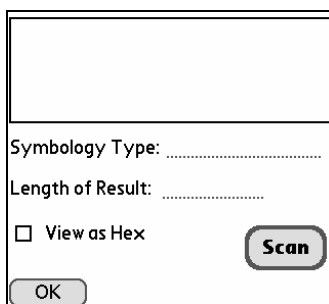
Triop Code 39 must be enabled for Code 128 to work correctly.

OPTIONAL: Perform a Scan Test

1. In the main screen of SocketScan, make sure the SDIO scanner is enabled and tap Test.

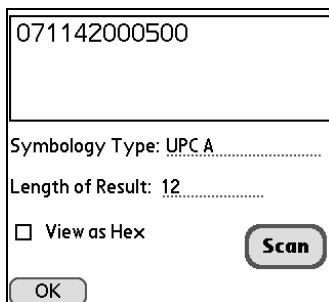


2. Tap Scan to trigger the scanner and scan a bar code.




You cannot use the hardware trigger button for the scan test. Use the Scan button to trigger the scanner.

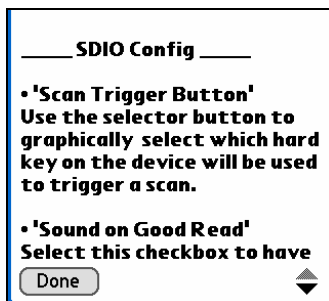
3. SocketScan will report the encoded data, as well as its symbology type and length. To view the data in hexadecimal format, check View as Hex.




4. When done, tap OK to exit the Test Scan.

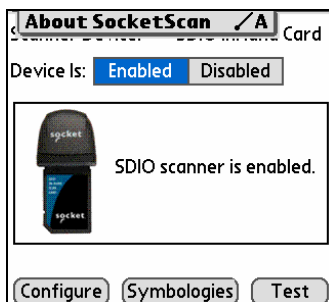
OPTIONAL: View Help Files

Whenever SocketScan is open, you can access help files by simply tapping on the  symbol in the upper right corner.



OPTIONAL: View Version Information

1. In the main screen of SocketScan, tap on the Options button  or tap on the upper left corner of the screen to access the Options menu.
2. In the Options menu, tap About SocketScan.



3. View the software version information, then tap OK.



Appendix A Specifications

Physical Characteristics:

SDIO Card Size: 32 x 24 x 2 mm

Laser Scanner Size: 27.1 x 29.6 x 14.8 mm

Total Mass: approx. 22.7 g

Power Consumption (3.3 V Supply):

Idle: 0.4 mA (1.32 mW)

Typical: 65 mA

Interface Standard: SDIO

Operating System Support:

Windows Mobile 2003 or 2003 Second Edition with ARM processor

Palm OS v4.1 or greater

Bar Code Symbologies Automatically Detected:

Code 39, UPC/EAN, Code 128, I 2of5, D 2of5, Code 93, Codabar, MSI/Plessey, Code 11, and Web Code

Scanner Decode Distance: 1.5 to 24+ inches (depends on symbol size, symbology, label media, W-N ratio, scan angle). See appendix D on Page 29 of this User Guide for more detailed information.

Software Included:

- Installation utility
- SocketScan software with keyboard emulation for Windows CE and Palm OS
- SocketScan Trigger for Windows CE

Warranty: Three years

Certification/Compliance:

FCC: Part 15, Class B

CE:EN55024:1998

C-TICK s.182

Appendix B Bar Code Label Specifications

All bar code symbols/labels should satisfy the appropriate AIM Uniform Symbology Specification.

Background Substrate:

The bar code symbol should be printed on material (media) that is reflective and has a matte (not glossy) finish. A background diffuse reflectance of at least 70% to 80% is desirable for optimum contrast. Retro-reflective media should be used to obtain decode distances greater than 36 inches.

Ink Color and Type:

The inked bars should not exceed 25% reflectance at the wavelength that is being used for reading, whether printed with black ink or colored ink. The reflectance value should not vary more than 5% within the same character.

Voids and Specks:

The code should be printed clearly, free of voids, specks, blemishes and lines that could “fool” the scanner. Specks or blemishes in the white spaces, or false or missing bar sections could be interpreted by the reading equipment as part of the code. Generally, the width of such flaws is more serious than the height. Code symbols/ labels should be rejected if these defects are present.

Definition:

The bars in the bar code symbol should be well defined. Their edges should not be rough or fuzzy, so that the bars and spaces have the proper widths intended for the bar code symbology used.

Contrast:

Background reflectance (that of the substrate on which the codes are printed) should always provide a good contrast relative to the ink reflectance (that of the code bars). The difference between the two should be at least 37.5% at the wavelength used for reading.

Tolerance:

The ratio of the widths of bars and spaces in a bar code symbol must conform to the appropriate AIM bar code specifications and can cause problems if not correct throughout the bar code. Problems can occur when bar edges are smeared or rough, or when they exhibit voids.

Appendix C Enabling or Disabling Symbologies

The SDIO In-Hand Scan Card is pre-set to automatically detect and decode (auto-discriminate) the most common bar code symbologies. To enable or disable symbologies, simply use SocketScan’s Symbology Selector.

General	Symbols	Test	About
<input checked="" type="checkbox"/>	UPC A	<input type="checkbox"/>	Code 39 ASCII
<input checked="" type="checkbox"/>	UPC E	<input checked="" type="checkbox"/>	Code 93
<input type="checkbox"/>	UPC E 1	<input checked="" type="checkbox"/>	Inter... 2 of 5
<input checked="" type="checkbox"/>	EAN 8	<input type="checkbox"/>	Discrete 2 of 5
<input checked="" type="checkbox"/>	EAN 13	<input checked="" type="checkbox"/>	Codabar
<input checked="" type="checkbox"/>	Code 128	<input checked="" type="checkbox"/>	MSI/Plessey
<input checked="" type="checkbox"/>	Code 39	<input type="checkbox"/>	Code 11
<input checked="" type="checkbox"/>	Triop Code 39	<input type="checkbox"/>	Webcode

Notes:

- The supported length of some symbologies will change after Symbology Selector is used. See Table 1.
- With more symbologies enabled, the scanner must work harder to search through all the possible combinations. This may make the decoding process slightly longer.

Table 1. Default Symbologies

Symbology	Scanner Default	Default Length	Length after Symbology Selector
UPC/EAN/JAN			
UPC-A	Enabled	N/A	N/A
UPC-E	Enabled	N/A	N/A
UPC-E1	Disabled	N/A	N/A
EAN-8	Enabled	N/A	N/A
EAN-13	Enabled	N/A	N/A
Code 128 (USS-128 & UCC/EAN 128)	Enabled	Any	Any
Code 39*			
Code 39	Enabled	2 to 23	2 to 55
Trioptic Code 39	Enabled	2 to 23	2 to 55
Code 39 Full ASCII	Disabled	2 to 23	2 to 55
Code 93	Disabled	2 to 38	2 to 55
Interleaved 2 of 5*	Enabled	14 Only	2 to 55
Discrete 2 of 5*	Disabled	12 Only	2 to 55
Codabar	Disabled	5 to 55	2 to 55
MSI Plessey*	Disabled	1 to 30	2 to 55
Code 11	Disabled	2 to 41	2 to 41
Webcode	Disabled	2 to 55	2 to 55



WARNING! Setting the length to “Any” may lead to inaccurate decodes of these symbologies!



The advanced symbology parameters listed in Table 2 can be modified by following the instructions in the Advanced Programming Guide or by using the SocketScan SDK. Check Socket's website for updates.

Table 2. Other Symbology Parameters

Symbology Parameters	Scanner Default
UPC/EAN/JAN	
Supplementals	Disabled
Transmit Check Digit	Enabled
Bookland EAN	Disabled
Decode UPC/EAN Supplementals	Ignore
UPC/EAN Supplemental Redundancy	Seven
Transmit UPC-A Check Digit	Enabled
Transmit UPC-E Check Digit	Enabled
Transmit UPC-E1 Check Digit	Enabled
Convert UPC-E to A	Disabled
Convert UPC-E1 to A	Disabled
EAN-8 Zero Extend	Disabled
UPC/EAN Security Level	0
UPC/EAN Coupon Code	Disabled
Code 39	
Convert Code 39 to Code 32	Disabled
Code 32 Prefix	Disabled
Check Digit Verification	Disabled
Transmit Check Digit	Disabled
Code 39 Full ASCII	Disabled
Interleaved 2 of 5	
Check Digit Verification	Disabled
Transmit Check Digit	Disabled
Convert I 2 of 5 to EAN-13	Disabled
MSI Plessey	
MSI Plessey Check Digits	One
Transmit Check Digit	Disabled
Check Digit Algorithm	Mod 10/Mod 10
Webcode	
Enable GT Web Code	Disabled



For more information on bar codes, symbologies, labels or other bar code related topics, visit any of the following web sites:

- a. www.aimglobal.org/technologies/barcode/
- b. www.aimglobal.org/aimstore/stackedsymbologies.htm
- c. www.adams1.com
- d. www.bizfonts.com
- e. www.barcode-us.com/info_center/upc.htm (UPC Codes)
- f. www.barcode-us.com/info_center/bookinfo.htm (Bookland EAN)
- g. www.dataid.com/bcsymbology.htm
- h. www.aaabarcodes.com
- i. www.snx.com/mechanics.html
- j. www.pscnet.com/html/aabcsymbologies.htm#Checksums
- k. www.idautomation.com/barcoding4beginners.html

Appendix D Decode Zone

Decode Zone

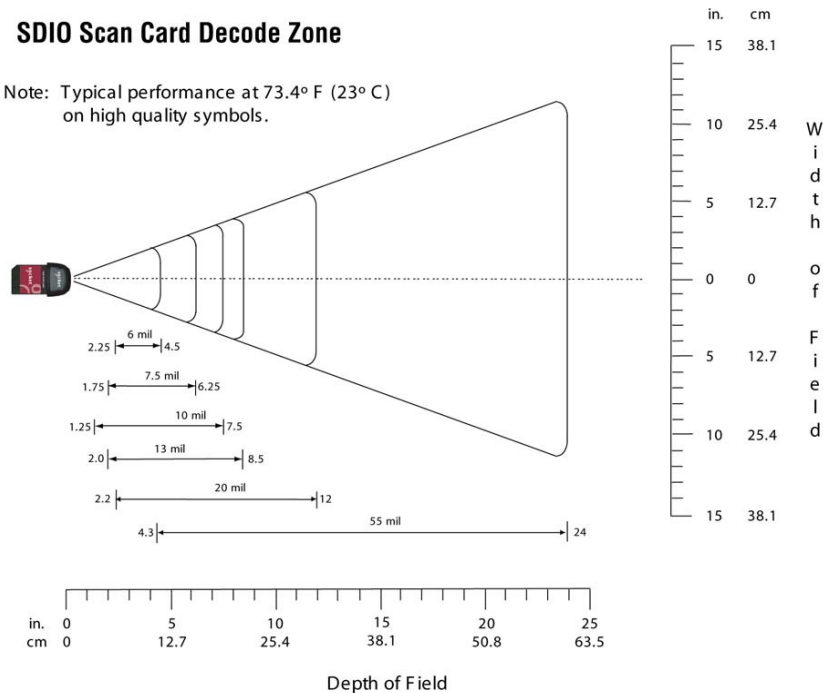
The decode zone for the SDIO In-Hand Scan Card is shown below. The decode zone is a function of various symbol characteristics including density, print contrast, wide-to-narrow ratio, and edge acuity. The minimum element width (also known as the “X Dimension”, “size” or “symbol density” of a bar code) is the width in thousandths of an inch (or ‘mils’) of the narrowest element (bar or space) in the bar code. The figures shown are the typical scanning distances (Depth of Field) for selected bar code sizes.

For example, the SDIO In-Hand Scan Card should be able to scan a 10 mil bar code when the bar code is positioned between 1.25 and 7.5 inches from the nose of the scanner.

The maximum readable length of a bar code symbol (Width of Field) at any given range is also shown. In the example above, the maximum length of a 10 mil bar code scanned at a distance of 7.5 inches is approximately 8 inches including the quiet zone.

SDIO Scan Card Decode Zone

Note: Typical performance at 73.4° F (23° C)
on high quality symbols.



Decode Distances

The table below lists the typical and guaranteed scanning distances for selected bar code sizes. The minimum element width ("X Dimension", "size" or "symbol density") is the width in mils of the narrowest element (bar or space) in the symbol.

Symbol Density /Bar Code Type /W-N Ratio	Bar Code Content /Contrast	Typical Working Ranges		Guaranteed Working Ranges	
		Near	Far	Near	Far
6 mil Code 39; 2.5:1	123 80% MRD	2.25 in 5.72 cm	4.50 in 11.43 cm	3.00 in 7.62 cm	4.00 in 10.16 cm
7.5 mil Code 39; 2.5:1	ABCDEF 80% MRD	1.75 in 4.45 cm	6.25 in 15.88 cm	2.50 in 6.35 cm	4.75 in 12.07 cm
10 mil Code 39; 2.5:1	FGH 80% MRD	1.25 in 3.18 cm	7.50 in 19.05 cm	2.00 in 5.08 cm	6.00 in 15.24 cm
13 mil UPCA; 2.5:1	012345678905 80% MRD	2.00 in 5.08 cm	8.50 in 21.59 cm	2.50 in 6.36 cm	7.25 in 18.42 cm
20 mil Code 39; 2.5:1	123 80% MRD	2.20 in 5.59 cm	12.00 in 30.48 cm	Note 2	10.75 in 27.31 cm
55 mil (4) Code 39; 2.5:1	CD 80% MRD	4.30 in 10.92 cm	24.00 in 60.96 cm	Note 2	16.00 in 40.64 cm

Notes:

1. Contrast measured as Mean Reflective Difference (MRD) at 670 nm.
2. Near ranges on lower densities depend on the width of the bar code and the scan angle.
3. Working range specifications at ambient temperature (23 C).
4. Retro-reflective label media used for 55 mil bar code.

Appendix E Tips for Better Scanning

Socket's SDIO In-Hand Scan Card is based on miniature CMOS linear imaging technology. This device is basically a camera that captures rectangular digital images measuring about 1 degree high and 40 degrees wide. The imaging rate varies between about 20 and 40 images per second and automatically compensates for ambient lighting conditions — the more ambient light, the more images per second. It is inappropriate, however, to compare this imaging rate to the rate of the sweeping beam of a laser scanner because the CMOS image is affected by blurring, while the laser technology is not. For this reason, it's important to hold this scanner still while scanning.

Adequate lighting of the target bar code is critical to scanning with imaging technology. Unfortunately, providing auxiliary lighting increases the size, energy consumption, control complexity and cost of the scanning device. For these reasons, the red light from the SDIO scanner is simply an aiming beam — it does not add any auxiliary lighting to the target bar code. For this reason, it's important to provide adequate ambient lighting to the target bar code while scanning with this scanner.

Like all cameras, the SDIO In-Hand Scan Card has a "focal length" (minimum and maximum distance from the target) where the image can be clearly captured. The focal length of the SDIO scanner is rather small compared to that of laser scanners. For best results while scanning "normal" sized bar codes such as the UPC codes used on retail items, the SDIO scanner should be held from about 4 to 7 inches (10 to 18 cm) from the target.

Tips for Maximizing SDIO Scanner Performance:

1. *Minimize movement during scanning* — The SDIO In-Hand Scan Card must be held reasonably steady on the target for a short period of time while the camera focuses and captures a clear image. The scanner typically requires only several milliseconds to capture a clear image, no more than a quarter to a half of a second.
2. *Provide adequate ambient lighting* — The SDIO scanner, like any camera, works much better when the target bar code is well-lit.
3. *Determine the optimum focal length* — The SDIO scanner has a fairly small focal length, so it is helpful to experiment until you find the best scanning distance. *Hint: When encountering scanning difficulties, most*


people have a tendency to move the scanner too close to the target bar code! Try moving it farther away for better results.

4. *Position the scanner at an angle* — No bar code scanner works well when positioned exactly perpendicular to the target bar code label, because the reflected light tends to “blind” the sensing mechanism. For best results, position the scanner at least 15 degrees away from the perpendicular to the surface of the bar code.
5. *Experiment with different techniques and conditions* — The more you experiment with different techniques, lighting conditions, scanning distances and positions, the more proficient you will become.


Conclusion

Socket’s SDIO In-Hand Scan Card is a convenient and affordable bar code scanning accessory for your mobile device, and with a little experimentation and practice, the performance will approach that of the larger and more expensive laser-based CompactFlash In-Hand Scan Card.

Appendix F Troubleshooting

For help on SocketScan, tap Start | Help on a Pocket PC, or tap on the  icon on a Palm device.

SYMPTOM:

I get the “No Card Detected”  icon in the task tray of my Pocket PC and can't trigger the laser or scan any bar codes.

POSSIBLE REASON	SOLUTION
Your Pocket PC does not recognize the SDIO In-Hand Scan Card..	Make sure the card is inserted properly. If necessary, remove and reinsert. If using battery power, be sure to tap Yes if asked whether you want to use battery power.

SYMPTOM:

When I try to scan, the scanner activates, but no data appears on my screen, and the scanner eventually deactivates.


POSSIBLE REASON	SOLUTION
The scanner is too close or too far from the bar code.	Practice so you get accustomed the most effective distance and scanning angle.
The bar code is incorrectly formatted or poorly printed.	Try scanning a bar code that is correctly formatted or printed well, such as on a retail package.
The bar code symbology may be disabled.	If you have Palm device, you can perform a scan test to identify the symbology. If needed, use Symbology Selector to enable the symbology.

SYMPTOM:

When I press the trigger button, nothing happens.

POSSIBLE REASON	SOLUTION
You programmed the trigger button incorrectly.	Test the button by assigning a different program to it and make sure it works properly.

Appendix G Technical Support

For help on SocketScan, tap Start | Help on a Pocket PC, or tap on the  icon on a Palm device.

If you have trouble installing or using SDIO In-Hand Scan Card, Socket has two technical support resources to help you. Please note that technical support is available in English only.

1. **Socket On-Demand Support (SOS)**

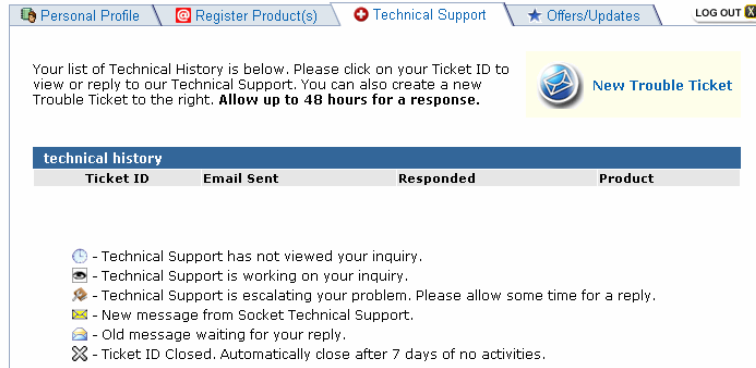
Socket On-Demand Support is an interactive technical support program that focuses in on your specific problem to provide the answers you need. SOS provides immediate service and is the best place to start for technical support. To access SOS, visit: www.socketcom.com/support. Click on the SOS icon.



If SOS cannot solve your problem, end the session by submitting an email inquiry to a Socket technical support engineer as prompted. Your interactive session will be saved for reference.

2. Live Technical Support

IMPORTANT! To obtain personal assistance from a Socket technical support engineer, you must first register your product online at www.socketcom.com/prodreg.



The screenshot shows a web interface for technical support. At the top, there is a navigation menu with tabs: Personal Profile, Register Product(s), Technical Support (highlighted), Offers/Updates, and LOG OUT. Below the menu, there is a text block: "Your list of Technical History is below. Please click on your Ticket ID to view or reply to our Technical Support. You can also create a new Trouble Ticket to the right. Allow up to 48 hours for a response." To the right of this text is a yellow button with a mail icon and the text "New Trouble Ticket". Below this is a table titled "technical history" with columns: Ticket ID, Email Sent, Responded, and Product. Below the table is a legend with five items, each with an icon and a description: a clock icon for "Technical Support has not viewed your inquiry.", a person icon for "Technical Support is working on your inquiry.", a person with a plus icon for "Technical Support is escalating your problem. Please allow some time for a reply.", an envelope icon for "New message from Socket Technical Support.", and a mail icon with a plus sign for "Old message waiting for your reply." Below the legend is a crossed-out box icon for "Ticket ID Closed. Automatically close after 7 days of no activities."

After you register your product and log in, click on the **Technical Support** tab, then click **New Trouble Ticket** to submit an online request for technical support.

Afterwards, you can log in anytime to monitor the status of your request. If we are unable to resolve your support inquiry online, we can arrange for a technical support representative to call you at a specific time.

Please refrain from disassembling the scanner. Disassembly of this device will void the product warranty.

Limited Warranty

Socket Communications Incorporated (Socket) warrants this product against defects in material and workmanship, under normal use and service, for the following period from the date of purchase:

Plug-in card: Three years

Incompatibility is not a defect covered by Socket's warranty. During the warranty period, Socket will, at its option, repair or replace the defective product at no charge when furnished with proof of retail purchase, provided that you deliver the product to Socket or to an authorized Socket Service Center.

The returned product must be accompanied by a return material authorization (RMA) number issued by Socket or by Socket's Authorized Service Center. If you ship the product, you must use the original container or equivalent and you must pay the shipping charges to Socket. Socket will pay shipping charges back to any location in the contiguous United States. This warranty applies only to the original retail purchaser and is not transferable.

Socket may, at its option, replace or repair the product with new or reconditioned parts and the returned product becomes Socket's property. Socket warrants the repaired or replaced products to be free from defects in material or workmanship for ninety (90) days after the return shipping date, or for the duration of the original warranty period, whichever is greater.

This warranty does not cover the replacement of products damaged by abuse, accident, misuse or misapplication, nor as a result of service or modification other than by Socket.

SOCKET IS NOT RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM BREACH OF ANY EXPRESS OR IMPLIED WARRANTY, INCLUDING DAMAGE TO PROPERTY AND, TO THE EXTENT PERMITTED BY LAW, DAMAGES FOR PERSONAL INJURY. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Some states do not allow limitation of implied warranties, or the exclusion or limitation of incidental or consequential damages, so that the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

This product may contain fully tested, recycled parts, warranted as if new.

For warranty information, email info@socketcom.com.

Limited Software Warranty

LIMITED WARRANTY. SOCKET warrants that the original disk or CD ROM is free from defects for 90 days from the date of delivery of the SOFTWARE.

CUSTOMER REMEDIES. SOCKET'S entire liability and your exclusive remedy shall be, at SOCKET'S option, either (a) return of the price paid or (b) replacement of the SOFTWARE which does not meet SOCKET'S Limited Warranty and which is returned to SOCKET with a copy of your receipt. Any replacement SOFTWARE will be warranted for the remainder of the original warranty period or 30 days, whichever is longer. THESE REMEDIES ARE NOT AVAILABLE OUTSIDE OF THE UNITED STATES OF AMERICA.

NO OTHER WARRANTIES. SOCKET disclaims all other warranties, either express or implied, including but not limited to implied warranties of merchantability and fitness for a particular purpose, with respect to the SOFTWARE and the accompanying written materials. This limited warranty gives you specific legal rights. You may have others which vary from state to state.

NO LIABILITY FOR CONSEQUENTIAL DAMAGES. In no event shall SOCKET or its suppliers be liable for any damages whatsoever (including, without limitation, damages for loss of business profits, business interruption, loss of business information, or other pecuniary loss) arising out of the use of or inability to use the SOFTWARE, even if SOCKET has been advised of the possibility of such damages. Because some states do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply to you.

EXPORT LAW ASSURANCES. You may not use or otherwise export or reexport the SOFTWARE except as authorized by United States law and laws of the jurisdiction in which the SOFTWARE was obtained. In particular, but without limitation, none of the SOFTWARE may be used or otherwise exported or reexported (a) into (or to a national or resident of) a United States embargoed country or (b) to anyone on the U.S. Treasury Department's list of Specially Designated Nationals or the U.S. Department of Commerce's Table of Denial Orders. By using the SOFTWARE, you represent and warrant that you are not located in, under control of, or a national or resident of any such country or on any such list.

GOVERNMENT END USERS. If the SOFTWARE is supplied to the U. S. Government, the SOFTWARE is classified as "restricted computer software" as defined in clause 52.227-19 of the FAR. The U. S. Government's rights to the SOFTWARE are as provided in clause 52.227-19 of the FAR.

CONTROLLING LAW AND SEVERABILITY. This License shall be governed by the laws of the United States and the State of California. If for any reason a court of competent jurisdiction finds any provision, or portion thereof, to be unenforceable, the remainder of this License shall continue in full force and effect.

Regulatory Compliance

The Socket SDIO In-Hand Scan Card is designed to be compliant with the rules and regulations in locations where they are sold and will be labeled as required. This product is type approved users are not required to obtain license or authorization before using.

Radio Frequency Interference Requirements

This device complies with part 15 of the FCC rules. Operation is subject to the following conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment is also ETS 300 328, ETS 300 826 and C-TICK compliant. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user may try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna of the radio or television.
- Increase the distance separating the equipment and the receiver.
- Connect the equipment to an outlet on a different branch circuit than that of the receiver.
- Consult the dealer or an experienced radio/TV technician for help.

The user may find the following booklet helpful:

How to Identify and Resolve Radio-TV Interference Problems

This booklet is available from the U.S. Government Printing Office, Washington, D.C. 20402.

